Supporting Healthy Sleep Behaviors through Ubiquitous Computing

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A research agenda combining expertise in **human-centered design, computer science, sleep medicine, and nursing** exploring the design, development, and evaluation of ubiquitous computing tools for supporting individuals in understanding, monitoring, and motivating good sleep behaviors.

**How’s my sleep?**

**Unobtrusive Sleep Sensing:**
We are exploring ways of unobtrusively monitoring sleep behaviors through sensing instrumented on smartphones and within the sleep environment. Sensors include light, sound, touch interactions, running apps, location, and motion.

**What’s disrupting my sleep?**

**Lullaby:**
A bedside capture and access tool to help identify environmental sleep disruptors in the bedroom via the use of temperature, light, sound, and motion sensors plus infrared cameras.

**SleepTight:**
A smartphone-based app that uses a lockscreen widget to allow for one touch self-monitoring of and reflection on behavioral sleep disruptors such as caffeine, meals, or exercise.

**How’s sleep impacting my life?**

**Motivating Healthy Sleep:**
Quality sleep is one of the first things sacrificed when people are busy, stressed, or are overworked. However, the lack of sleep can make these things worse. We are exploring ways of visualizing how sleep quantity and quality impacts workplace productivity, stress, mood, and reaction time to allow people to make better choices.

**Supporting Self-Experiments:**
We seek to move beyond just logging data and looking for correlations. We aim to design technology to guide people through structured, controlled experiments using small n study designs.

http://dub.washington.edu/projects/sleep-technology